RULES
OF
TENNESSEE DEPARTMENT OF CONSERVATION
DIVISION OF SURFACE MINING

CHAPTER 0400-3-7
COAL

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0400-3-7-.01 INTRODUCTION. In addition to fulfilling all the requirements of Sections 58-1540-58-1564, T.C.A. and all requirements in Chapters 0400-3-1-0400-3-6, the following special provisions contained in Chapter 0400-3-7 are to be adhered to by all operators of surface coal mines.

Authority: *T.C.A. Section 58-1543.* ***Administrative History****. Original Rule certified May 24, 1974. Amended, filed November 12, 1975, effective December 12, 1975.*

0400-3-7-.02 ACCESS ROADS.

(1) Definition. -"Haulageway or access road" shall mean any road constructed, improved or used by the operator (except public roads) which ends at the pit or bench and which is located within the permitted area. A bench may serve as a haulageway, but a haulageway cannot serve as a bench.

(2) Location.

(a) The location of the proposed haulageway shall be identified on the site by visible markings at the time the reclamation and mining plan is pre-inspected and prior to commencement of construction.

(b) No road shall be constructed in a stream or drainage channel proper or so close to its bank that material will spill into the channel during construction, use, or maintenance.

(3) Grading.

(a) Maximum Grades-New access roads shall be located and constructed so that:

1. No sustained grade shall exceed 10%.

2. The maximum grade shall not exceed 15% for 300 feet.

3. There shall not be more than 300 feet of maximum grade for each 1,000 feet of road constructed.

4. The surface shall be insloped toward the ditch line at the minimum rate of 1/2 inch per foot of surface width.

5. The grade on switchback curves must be reduced to less than the approach grade and shall not be greater than I 0%

6. The grade on temporary roads on or between benches, which will be destroyed within three (3) months by the mining or reclamation process shall not exceed 20%.

(b) Cut Slopes-Cut slopes shall not be more than 45 degrees, or 1.0 horizontal to 1.0 vertical, except in stable rock.

(4) Drainage.

(a) Stream or Drainage Crossings. -Drainage structures shall be required in order to cross a stream or drainage channel. They shall be such so as not to affect the normal flow of the stream. Consideration will be given to the time of year the stream is crossed and the length of time the stream channel is used, but in no event, and under no condition, will the normal flow of the stream be affected or the sediment load of the stream be significantly increased during construction and/or use.

(b) Ditches. -A ditch shall be provided on both sides of a through-cut and on the inside shoulder of a cut-fill section, with ditch relief cross-drains being spaced according to grade. Water shall be intercepted before reaching a switchback or large fill and led off. Water on a fill or switchback shall be released below, not over, the fill.

(c) Culverts. - Ditch relief culverts shall be installed as needed to insure adequate drainage as determined by the Commissioner.

1. The suggested spacing of culverts is as follows:

Road Grade in Percent	Spacing of Culverts in Feet	
2-5	300	800
6-10	200	300
11-15	100	200

In determining culvert spacing, consideration shall be given to the area drained, and its slope, shape, cover and runoff characteristics.

2. The inlet end shall be protected by a headwall of suitable material and the outlet end shall have an apron of suitable material provided for the outflow to spill on. No water shall be allowed to flow across loose spoil. Ditches in these areas shall be lined with rock.

3. The culvert shall be covered by compact fill to a depth of one foot or half the culvert diameter, whichever is greater.

4. Culvert openings installed on access roads should not be less than one hundred (100) square inches in area, but, in any event, all culvert openings shall be adequate to carry normal runoff and shall receive necessary maintenance to function properly at all times.

(d) Removal of Drainage Structures.-No bridges, culverts, stream crossings, etc., necessary to provide access to the operation, may be removed until reclamation is completed and approved by the Commissioner. The same precautions as to water quality are to be taken during removal of drainage structures as those taken during construction and use.

(5) Construction and Maintenance.

(a) Surfacing - Access roads must be surfaced with an approved, non-erodible material, but shall not be surfaced with coal refuse or any acid-producing or toxic material. Approved materials include crushed stone, gavel, "red dog," crushed slag, and chert.

(b) Seeding of Slopes - All f fill and cut slopes which will be left after mining shall be seeded immediately after the construction of the road in order to control erosion in accordance with Rule 0400-3-7-.04(4).

(c) Surface Drainage - No berm produced during construction, grading, or maintenance of the road shall be left on the ditch side.

(6) Abandonment of Access Road.

(Rule 0400-3-7-.02, continued)

(a) When an access road is to be abandoned and shall no longer be used as a road by the operator, the landowners, or the State or National Forest Services, vegetative cover and surface drainage to minimize erosion shall be provided. Regardless of the future use of the road, adequate surface drainage shall be provided. "Abandoned" means that the operator has ceased to use the road and has not turned the road over to another party for his use. When the road is abandoned and proper vegetative cover is provided, the bond on the road shall be released. If the road is not to be abandoned, but turned over to another party for his use, and adequate surface drainage and surfacing have been provided, the bond on the road shall be released.

(b) When the access road is to be abandoned, culverts shall be removed and replaced by water bars of the earth or rock type, open-top log culverts, or similar structures. They shall be installed according to the following table of maximum spacings:

Grade (Percent)	Maximum Spacing (Feet)
2	250
5	135
10	80
15	60

(7) Special Circumstances. Should the Division determine that modifications to this Chapter are necessary because of topography or particular watershed situations, the Commissioner may, in his discretion, make such modifications.

Authority: *T.C.A. Section 58-1543.* ***Administrative History****. Original Rule was certified May 24, 1974. (5)-Amended: Filed May 17, 1974; Effective June 17, 1974.*

0400-3-7-.03 BACKFILLING AND GRADING.

(1) General Provisions.

(a) Application. -The following provisions shall apply to all coal mining operations, in addition to other specific provisions applying to particular types of mining.

(b) Handling of Toxic Materials.-All toxic or acid-producing materials shall be properly handled and segregated within the pit. After removal of the coal, the faces of coal seams, the bottom of the pit, and all toxic materials, waste coal, metal, lumber, and other mining refuse shall be covered with spoil to a compacted depth of at least four (4) feet. However, the coal seam may, instead, be covered by a permanent water impoundment if the impoundment is part of the mining and reclamation plan approved by the Commissioner. This work is to be completed as soon as possible, but not later than the time specified in this regulation.

(c) Breakthrough to Underground.-Any breakthrough to an underground mine must be reported. If any water drains from the underground mine, the Water Quality Control Division of the Department of Public Health and the Knoxville Office of the Surface Mining Division or the Inspector shall be notified as soon as possible, but at least within twenty-four (24) hours, and temporary corrective measures started immediately. Plans for permanent control of drainage must be submitted to the Knoxville Office within five (5) days, and the work shall be completed within thirty (30) days of approval. If no water drains from the breakthrough, the Knoxville Office shall be notified in writing within five (5) days. If the operator is in doubt as to whether the underground mine is wet or dry, the breakthrough shall be reported as soon as possible, but at least within twenty-four (24) hours.

(d) Protection of Streams.-No mining, placement of spoil, or associated activity will be permitted within one hundred (100) feet horizontal distance of any stream, except that roads may be constructed within one hundred (100) feet of a stream where such roads are part of the approved mining and reclamation plan and in special circumstances, such as where head-of-hollow fill plans have been approved by the Commissioner,

(e) Water Control.

1. The water flow from the mine area and haul roads shall be controlled to mini. mize soil, erosion, damage to other lands, and pollution of streams or other waters. This may include construction of checks, impoundments, silt-trap dams, and water bars in conjunction with other control measures as required. All sediment control structures shall be constructed according to criteria contained in the Drainage Handbook for Surface Mining provided by the Department of Conservation.

2. The Tennessee Water Quality Control Act of 1970, TCA 70-324 et seq., requires that all runoff or pumped discharges must be covered by a discharge permit from the Division of Water Quality Control if the quality of the water is or may be altered in any way. All discharges or runoff must meet the water quality standards promulgated by the Water Quality Control Division.

(f) Special Conditions. -When special unusual conditions at the site make the application of these regulations unwise, unnecessary, or impossible, deviations may be allowed with written approval of the Commissioner as long as the effects do not violate the intent of the Law.

(2) Contour Mining.

(a) Application.- These regulations shall apply in areas where the slope of the original ground covering the coal seam or lying below the coal seam exceeds 15 degrees.

(b) Spoil Handling- Landslides.

1. The mining plan shall be devised and the mining operation conducted so as to minimize erosion and prevent all landslides. A landslide is defined as any uncontrolled earth movement which carries spoil outside the approved limits.

2. If a landslide occurs, all mining at the affected mine shall cease immediately and shall not resume until written permission is obtained from the Division. Permission to resume mining shall not be granted until (i) the slide is stabilized and graded or the material is recovered and replaced on the bench or other designated area, and (ii) the mining plan has been re-examined and amended, if necessary in the opinion of the Division to prevent further slides.

(c) Fill Bench Limitation

1. (i) If the natural slope of the land for a distance of one-hundred (100) feet downslope from the coal seam outcrop is greater than 28 degrees from the horizontal, no spoil shall be placed downslope from the outcrop, temporarily or permanently. Therefore, no fill bench is permitted on slopes over 28 degrees, and no exception can be granted.

2. The slope below the coal seam means the average or mean slope of the ground. between the cropline and one-hundred (100) feet downslope. Before surface disturbance, the slope will be determined by making readings on the ground at intervals no greater than one-hundred (100) feet along -the cropline.

(iii) Where the slope of the land below the coal seam is less than 28 degrees, the upgraded spoil must be placed in such a way that the spoil toe will not extend more than fifty (50) feet downslope from the cropline, measured along the ground perpendicular to the contour line. This shall be the "ungraded spoil limit line", which is the maximum distance downslope that spoil may be placed during the initial mining phase, that is prior to final grading.

2. If any spoil crosses the spoil limit line, all mining shall cease immediately and shall not be resumed until proposed corrective actions are completed to the satisfaction of the inspector.

3. Prior to placing any spoil downslope from the cropline, where the slope is less than 28 degrees, tree vegetation must be cleared and grubbed (scalped) No tree vegetation shall be left to project from any spoil. This tree vegetation must be windrowed to produce a brush barrier. The brush barrier must be constructed so that the major limbs and tree trunks shall lay approximately parallel with the contour. The total disturbed area from the cropline to the downslope side of the windrowed brush barrier must not exceed one-hundred twenty-five (125) feet measured downslope from the cropline perpendicular to the contour line. The clearing and grubbing (scalping) shall not extend more than 500 feet along the cropline ahead of the active pit. In the case of multiple seam mining, this shall mean ahead of the active pit of the lowest seam. See Figure 1Virgin cut before final grading.

4. When the approved mining and reclamation plan calls for the use of mining methods such as, but not limited to, the modified -block cut, head-of-hollow fill, or offsite storage, deviations from the above limits shall be allowed for the purpose of temporary or permanent storage of spoil on a limited, designated area downslope from the cropline if the operator submits a plan which will prevent landslides and minimize erosion and it is approved by the Division.

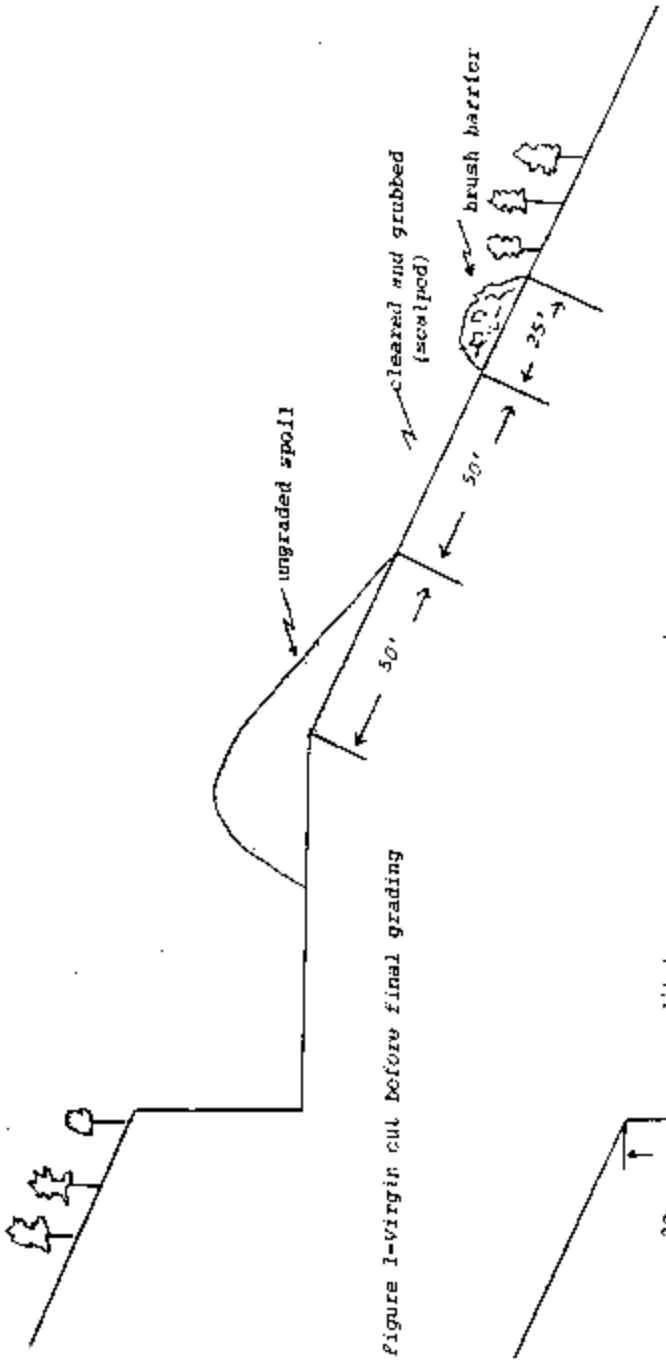

Figure 1-Virgin cut before final grading

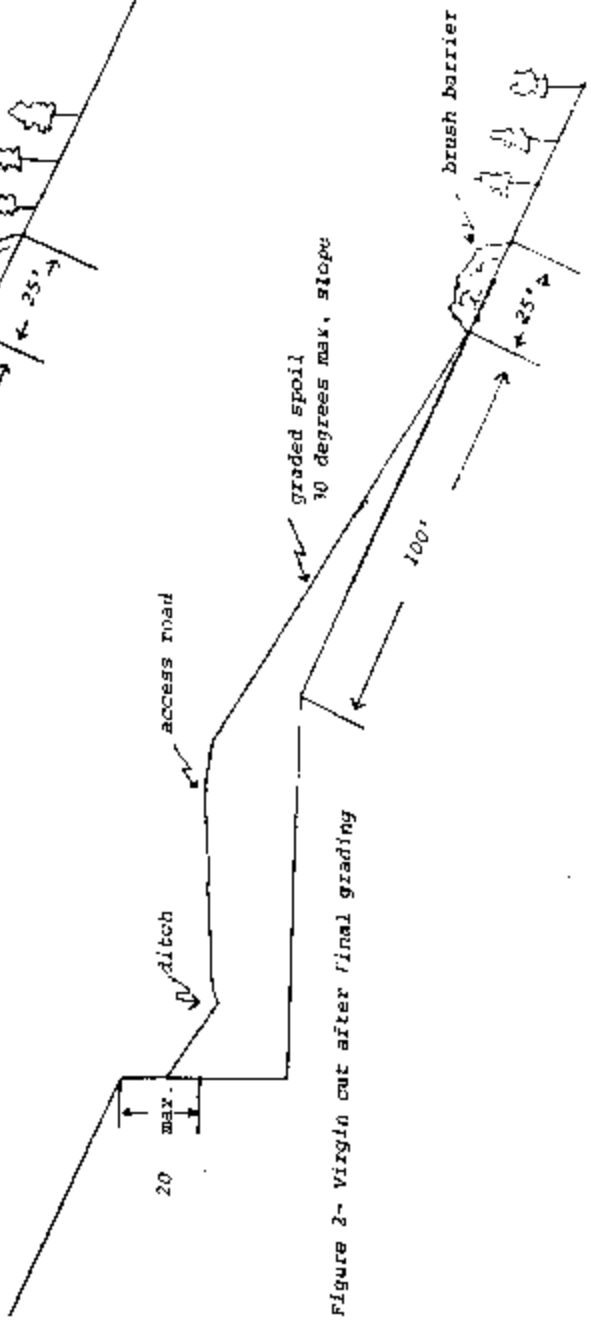

Figure 2- Virgin cut after final grading

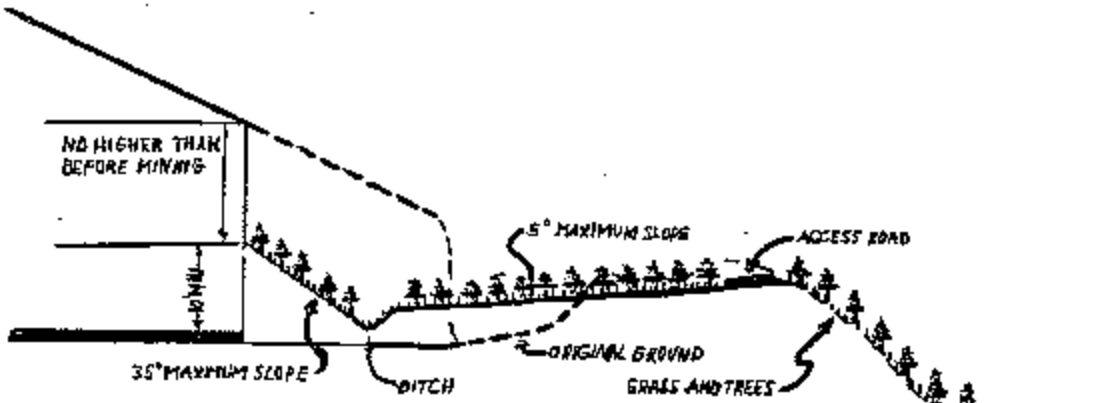

Figure 3 - Orphan Mine Regrading

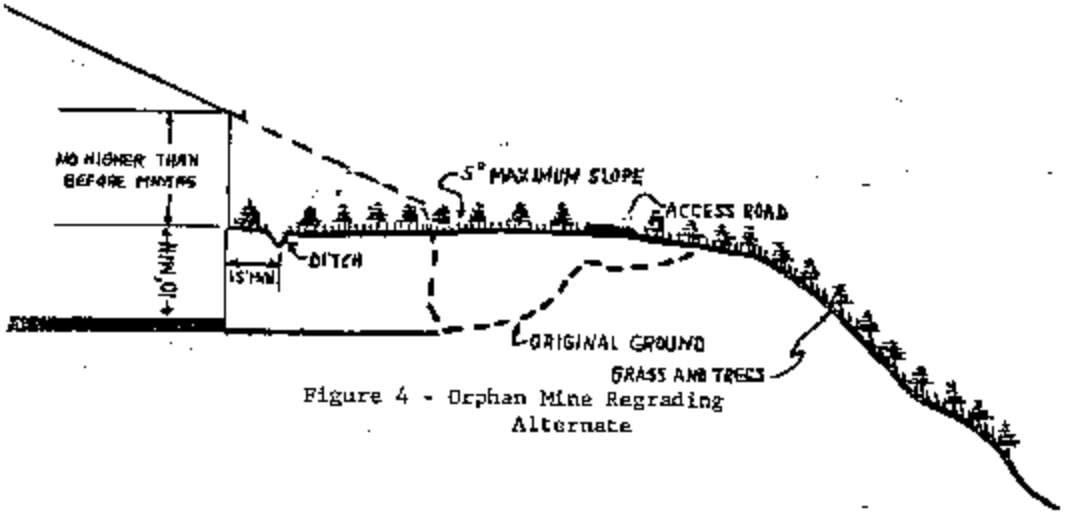

Figure 4 - Orphan Mine Regrading
Alternate

5. When the approved mining and reclamation plan calls for the use of mining methods such as, but not limited to, the modified block cut, head-of-hollow fill, or off-site storage, deviations from the above limits shall be allowed for the purpose of temporary or permanent storage of spoil on a limited, designated area downslope from the cropline if the operator submits a plan which will prevent landslides and minimize erosion and it is approved by the Division.

(d) Final Grading.

1. (i) The upgraded spoil shall be graded against the highwall and downward to roll gently over the outslope to blend smoothly with the surrounding land. During the final grading process, part of the ungraded spoil may be graded to a maximum distance of one-hundred (100) feet downslope from the cropline, measured along a perpendicular to the contour. The final graded outslope shall not be steeper than thirty (30) degrees from the horizontal, or that slope steepness which is accessable with earth grading equipment, whichever is less.

(ii) Spoil shall be placed against the highwall to eliminate or reduce its final height. A minimum terrace width of fifteen (15) feet shall be constructed to provide for an access road. A ditch shall be graded along the inside edge of the access road to conduct surface drainage from the fill bench to designated drainways. Such ditch shall be constructed to eliminate depressions in which water could accumulate pools. To insure proper drainage, the minimum grade of the ditch bottom shall be 1%. At least four (4) feet of compacted spoil shall be placed over the floor of the pit at all points including the bottom of all drainage ditches. The graded spoil from the terrace ditch to the highwall shall not be steeper than 30 degrees. No more than 20 feet of highwall may be left at points where no highwall existed before current mining. See Figure 2-Virgin cut after final grading.

2. When the mining operation is a second or subsequent cut on an orphan or otherwise previously mined area, the total elimination of the highwall shall not be required. All overburden not necessary to cover the floor of the pit shall be placed against the highwall so that the remaining highwall is no higher than that existing prior to the cur- mining. The entire bench area, including spoil piles from previous operations which have not naturally reverberated to current coverage standards, shall be graded to slope toward the highwall at a slope not to exceed 5 degrees. At least four (4) feet of compacted spoil shall be placed over the floor of the pit. A ditch shall be placed along the bench at the toe of the sloping spoil, as shown in Figure 3. Other or it a configurations meeting the highwall and slope limitations, such as that in Figure 4, shall also be allowed.

3. No slope, except stable rock highwall as provided for in subsection (2), shall exceed thirty (30) degrees. All rock and boulders rolling off the permitted area shall be removed to some approved locations within the permitted area, or the permitted area shall be enlarged to include the area where they are left. Large rocks shall be buried or placed in constructed drainways as lining or in an approved manner as water-retarding structures.

(e) Natural Drainways.-Natural drainways, where water flows occasionally in a well-defined channel, but less often than six months per year, shall be identified prior to mining and skipped. No mining will be allowed within twenty-five (25) feet of the centerline of a natural drain which crosses the contour. Fill or spoil placement and construction of access roads across natural drainways shall be conducted so as not to affect the normal flow of the drainway or materially increase the sediment load in the drainway. This may be accomplished by conveying the water in an adequate enclosed watertight conduit beneath the access road, or by spanning the natural drainway with a bridge, The conduit will be placed on the original drainway bed and will extend to a point ten (10) feet beyond the toe of the overburden or access road embankment.

(f) Multiple Seam Mining. When two or more seams are to be mined under any given permit, when the seams are not on the same highwall, the mining and reclamation plans will be treated as

special cases and judged on their own merits. The following general guidelines shall be followed:

1. Mining Sequence The lower seam shall be mined in advance of the seam above.

2. Overburden-Overburden from the seam being mined shall not extend beyond the solid bench of the seam below.

3. No ungraded spoil shall be allowed to extend, more than fifty (50) feet downslope from a cropline of any seam. If the distance between the cropline of the upper seam and the top of highwall of the next lower seam is greater than one-hundred (100) feet, spoil shall not be pushed across the intervening area to reach the lower bench, but must be hauled to the lower bench.

4. All requirements which apply to a single-seam mining shall apply to multiple seam mining unless the mining and reclamation plan proposes an acceptable variation and is approved in writing by the Commissioner.

(g) Highwall Access.-At least one access to the lands above the highwall, suitable for passage by a four-wheel drive vehicle, shall be provided every mile along the bench, at locations approved by the inspector.

(h) Keeping Operation Current.

1. All coal shall be picked up within thirty (30) days following removal of the overburden. (for the purpose of this provision, overburden shall be considered removed when less than four (4) feet remains above the coal.)

2. 1 f the operation includes only stripping (no angering), the grading and backfilling shall follow the coal removal by not more than fifteen (15) days, but in no instance shall an area be left ungraded more than 1,500 feet behind the removal of the coal.

3. If the operation includes stripping and angering, the angering shall follow the stripping by not more than sixty (60) days or 2,500 feet, and the grading and backfilling shall follow the angering by not more than fifteen (15) days, but in no instance shall an area be left ungraded more than 1,500 feet behind the augering.

4. If the operation includes only augering, the grading and backfilling shall follow the augering by not more than fifteen (15) days, but in no instance shall an area be left ungraded more than 1,500 feet behind the augering.

5. All backfilling and necessary grading and drainage work on a given area shall be completed within one hundred eighty (180) days after the initiation of sod disturbance on that area.

6. Modifications of these requirements may be made by the Commissioner if heavy rains or wet conditions make backfilling and/or grading impractical.

(i) Augering.

1. Angering is prohibited where the coal seam rises away from the outcrop at a slope greater than 1/2 degree, except where the coal seam is below drainage.

2. "Below drainage" is defined as being below the established water table, or below the elevation of all streams or other water bodies in the vicinity of the permitted area.

3. Auger holes shall be plugged by forcing spoil into the openings by machine immediately after angering.

4. The exposed face of the coal seam at the highwall shall be covered with backbone material and compacted to at least ten (10) feet above the top of the auger holes. Backfiring and grading shall follow the angering by not more than fifteen (15) days or 1,500 feet along the bench.

5. Restored areas shall be graded so there will be no depressions to accumulate water and to facilitate rapid runoff of surface drainage from the auger area.

6. A twenty-five (25) foot barrier of coal shall be left between any underground mine and the completed auger hole. Test listings may be necessary to determine the solid depth of outcrop so as not to penetrate the underground mine.

7. Any breakthrough to an underground mine must be reported. If any water drains from the underground mine, the Knoxville office or the inspector shall be notified as soon as possible, but at least within twenty-four (24) hours, and temporary corrective measures started immediately. Plans for permanent control of drainage must be submitted to the Knoxville office within five (5) days, and the work shall be completed within thirty (30) days of approval. If no water drains from the breakthrough, the Knoxville office shall be notified in writing within five (5) days. If the operator is in doubt as to whether the underground mine is wet or dry, the breakthrough should be reported as soon as possible, but at least within twenty-four (24) hours.

(j) Head-of-Hollow Fills.

1. Head-of-hollow fills shall be allowed for off-site permanent storage of excess spoil material only if the operator submits an acceptable engineered plan which is approved in writing by the Commissioner.

2. Construction of such fills shall not violate the terms of a water quality discharge permit.

3. Unless excepted by the Commissioner, plans for head-of-hollow fills shall provide for:

(i) A five-foot (5) thick drainage blanket of large rocks or boulders, extending from the toe of the fill up the hollow to the upper surface of the flu.

(ii) Spoil placement in horizontal layers above the drainage blanket, compacted to a maximum thickness of six (6) feet per layer.

(iii) Filling of the hollow from one side completely to the other, and from the downstream face to the head.

(iv) No slope of more than 30 degrees on the downstream face, with the sloping sections interspersed by terraces draining to the side for every twenty-five (25) foot difference in elevation.

(v) Crowning of the final upper surface so that no water drains over the downstream face.

(vi) Adequate surface drainage so that water will flow around the fill and not over it, with water carried in graded ditches. Ditches on slopes over 5 degrees shall be rock-lined or rock-filled.

(3) Area Mining.

(a) Application.- These regulations shall apply in areas where the slope of the original ground covering the coal seam is 15 degrees or less.

(b) Site Preparation. -Topsoil and other soil suitable for supporting vegetation shall be separated and removed to an approved storage area for stockpiling during the mining operation. Following mining and initial grading, the topsoil and other soil suitable for supporting vegetation shall be replaced over the area affected.

(c) Final Grading.

1. Complete backfilling to approximately the original contour or rolling topography shall be required, beginning at or beyond the top of the highway and sloped to the toe of the spoil bank at a maximum angle not to exceed the approximate contour of the land with no depressions to accumulate water, and all highwalls and spoil piles shall be eliminated.

2. Lands shall be deemed to have been completely backfilled and graded to their approximate original contour when the contour of the land conforms approximately to the contour of the original ground, but the final surface of the restored area need not necessarily have the exact elevations of the original ground surface. However, where a flat surface or a surface with less slope than the original ground surface is desired, such surface shall be deemed to comply with backfilling and grading to the approximate original contour. In addition, when a very flat surface is mined, the land may be restored to gently rolling terrain to enhance drainage.

(d) Blending With Adjacent Lands.-Spoil abutting onto unstrapped land shall be graded so as to blend into the adjoining stripped lands. In order to prevent excessive disturbance of the adjoining unstripped lands through the placing of spoil onto already vegetated areas, spoil will be considered as blending into the unstripped lands if the angle between the spoil and the unstripped lands is twelve (12) degrees or less, except that the slope created shall not be greater than twenty-five (25) degrees.

(e) Water Diversion Ditches.-Water diversion ditches or terraces shall be constructed in the final grading to control water runoff and erosion on long uninterrupted slopes and to remove surface water runoff to a safe outlet. For the purpose of this regulation, a diversion ditch shall be a channel constructed on a continuous grade of one to two percent (1%-2%) across the slope, with a supporting ridge on the lower side and the entire ditch seeded to an adaptable grass or grass-legume mixture. The depth and width of the diversion ditch may vary depending on the length and degree of slope.

(f) Water Impoundments.

1. Water impoundments, as an alternative to backfilling the final pit, are encouraged and will be allowed if they are part of the approved mining and reclamation plan and if they meet -the following minimum criteria:

(i) Adequate sources of water must be available to maintain the water level at least four (4) feet above the top of the coal seam at all times.

(ii) Proper measures must be taken to prevent undesirable seepage.

(iii) Adequate spillways or other measures necessary to control overflow must be provided.

(iv) Adequate means of access to the water impoundment must be left or provided.

(v) The highwall or low wall must be reduced to a slope fifteen (15) degrees or less, sloping to the water's edge.

2. All impoundments must be designed in conformance with the criteria included in the Drainage Handbook for Surface Mining provided by the Department of Conservation.

(Rule 0400-3-7-.03, continued)

(g) Keeping Operation Current.-The grading and backfilling shall not be more than two (2) spoil ridges behind the pit being worked, the spoil from this pit being considered the first ridge. All backfilling and grading shall be completed within ninety (90) days after the completion of an operation or a prolonged suspension of work in the area and within one hundred eighty (180) days of initial disturbance. Modifications to these requirements may be made by the Commissioner in connection with the backfilling of the final pit.

Authority: *T.C.A. Section 58-1543.* ***Administrative History****. Original Rule certified May 24, 1974. (1)(c), (2)(b), (2)(c), (2)(d), (2)(e), (2)(f), (2)(i), (2)(j), (3)(b), Figure 1, Figure 2, Figure 3, and Figure 4-Amended: Filed May 17, 1974; Effective June 17, 1974. (1)(c), (2)(c), (2)(d), (2)(f), (3)(f); Figure 1, Figure 2, Figure 3, Figure 4-Amended: Filed November 12, 1975; to be effective December 12, 1975. Rules 0400-3-7-.03(c) and 0400-3-7-.03(d) Suspended December 11, 1975 until June 30,1976.*

0400-3-7-.04 VEGETATION.

(1) Objective in Revegetation. The objective of revegetation is to provide a self-regenerating cover on the disturbed area as soon as possible and to minimize erosion.

(2) General Rules Governing Seeding or Planting.

(a) Seasonal Feasibility.-Immediately after grading, appropriate vegetation shall be planted and seeded in the proper season in accordance with accepted agricultural and reforestation practices.

(b) Plant Selection.

1. Plants that give a quick, permanent, protective cover shall be used. Select plants to use after evaluating both their potential for stabilization and their use in terms of forest products, wildlife habitat, and agricultural benefits.

2. Adapted plant species and mixtures are listed in 0400-3-7-.04(5)j-m.

(c) Direct Seeding.

1. Direct seeding of trees and shrubs is encouraged on all disturbed areas to supplement planted trees.

2. Some Species Adapted to Direct Seeding:

(i) Black (Sweet) Birch (ii) Virginia Pine (iii) Pitch Pine (iv) Red Maple (v) European Black Alder (vi) Autumn Olive

3. Species that can be direct seeded are not limited to the above list.

(3) Contour Mining.

(a) Application.- These regulations shall apply in areas where the slope of the original ground covering the coal seam or lying below the coal seam exceeds 15 degrees.

(b) Area to be Revegetated.-The entire disturbed area shall be fertilized and vegetated with adapted legumes and/or perennial grasses, and adapted trees and/or adapted shrubs, except as hereinafter provided. Adapted species and mixtures are listed in 0400-3-7-.04(5)j-m.

(c) Access Roads.-Roadbeds shall be seeded to adapted legumes and perennial grasses only, no trees being required. This vegetative requirement for roads may be modified if, in the opinion of the Commissioner, the roadway will not contribute offsite damage to the public or adjacent property owners.

(d) Shrubs for Wildlife. -Shrubs for wildlife may be planted to include border plantings, clump plantings, intervening strips, or area planting.

(4) Area Mining.

(a) Application, These provisions shall apply where regrading to original contour as defined in 0400-7-03(3)(c) is used.

(b) Area to be Revegetated.-The entire disturbed area shall be fertilized and vegetated with adapted legumes and/or perennial grasses, and adapted trees and/or adapted shrubs, except as hereinafter provided. If future use of area will be agricultural grassland or crops, trees and/or shrubs may be omitted. Adapted species and mixtures are listed in 0400-3-7-.04(5)j-m.

(c) Shrubs for Wildlife.-Shrubs for wildlife may be planted to include border plantings, clump plantings, intervening strips. or area plantings.

(5) Mixture and Seed Requirements

(a) Seed Inoculation.-All legume seed, except black locust, shall be inoculated.

(b) Scarifying.- All black locust and sericea lespedeza seed dull be scarified, except when used in fall and winter seeding.

(c) Preparation of Soil. -Preparation of the seed bed by harrowing, discing, or other approved methods, prior to seeding is required, except on slopes greater thin fifteen (IS) degrees.

(d) Seeding Dates and Rates.-Dates of seeding and rates of seed used shall be in accord with the requirements of the adapted species selected and elevation of the site.

(e) Livestock Grazing.-Protection of seeded area from grazing by livestock is required during the first two growing seasons

(f) Fertilizer.-Fertilizer shall be applied at a minimum rate of 100 pounds each of Nitrogen (N), Phosphate (P205) and Potash (K20) per acre. Agricultural lime shall be applied at a minimum of eight thousand (8,000) pounds per acre.

(g) Mulch.

1. All disturbed areas shall be mulched. The approved mulch and rates are:

2. Dry Wheat Straw or Hay at a rate of four thousand (4,000) pounds, approximately 80 bales per acre.

3. Wood Fiber Mulch at a rate of one thousand five hundred (1,500) pounds per acre, but not in the months of November. December, January and February.

4 Dry Wheat Straw and hay must be anchored by asphalt emulsion or by discing the straw or hay on contour in mines soil.

(h) Planting.

1. Tree species - Planting of a single species, or of two or more species, in pure blocks or strips at least thirty (30) feet wide, over the entire area, or of a single species in a block or a contour strip is required

(i) Preferred tree species are.

Virginia pine
Shortleaf pine (on light (sandy) soils only)
Black locust

(ii) Other species that may be used are:

European black alder
Red maple
Loblolly pine (below,, 000 ft. elevation)
Pitch pine
White pine

2. Tree seedlings shall be planted at a 6'x 7'spacing.

3. Seedlings should be planted between November I and May 1.

(i) Wildlife Planting.

1. Plantings for wildlife food and cover &hall consist of one or mom of the following:

(i) Shrub Lespedeza:
Lespedeza bicolor
Lespedeza japonica

(ii) Bush Honeysuckle:
Amur - Lonicera maackii (Fall fruiting)
Tatarian - Lonicera tataric (Summer fruiting)
Autumn Olive - Elaeagnus umbellata (Fail fruiting)

2. The following type of plantings may be made:

(i) Intervening contour strips and borders. Contour strips or borders of wildlife food and cover may be substituted for the appropriate number of trees to provide space for planting one or more of the following shrub species:

(I) Bush honeysuckle - I to 3 rows - 6' x 6' spacing - Feb. I to April IS

(II) Autumn olive - I to 3 rows - 6'x 6' spacing - Feb. I to April 15

(III) Shrub lespedeza plants - 5 rows - 2'x 2'spacing - Feb. I to April 15

(IV) Shrub lespedeza seeded - 12 to 15 feet width - 20 Ibs./ac. scarified seed March I to June 15.

(ii) Clumps - Clump plantings numbering not more than 2 per acre may be substituted for trees to provide space for one or more of the following shrub species

(I) Bush honeysuckle - 25 plants - 6' x 6' spacing - Feb. I to April 15

(II) Autumn olive - 25 plants - 6'x 6'spacing - Feb. I to April 15

(III) Shrub lespedeza plants - 700 plants - 2' x :' spacing - Feb. I to April 15

(IV) Shrub lespedeza - I lb. scarified seed 50'x 50' area - March I to June 15.

(iii) Rocky and Stony Areas.

(I) Shrub lespedeza may be substituted for tree species using the following mixture for rocky and stony sites where planting of tree seedlings is not possible:

(II) Plant the mixture from Dec. I to April I S.

SPECIES	AMOUNT PER ACRE
Tall fescue	20 pounds
Shrub lespedeza (scarified seed)	10 pounds

(j) Legumes, Perennial Grasses, and Annual Grains. One of the following mixtures shall be sown on the entire disturbed area, unless an alternative mixture is proposed in the Revegetation Plan and approved by the Commissioner.

1. Mixture One: February-April Per Acre

(i) Sericea Lespedeza (scarified)	25 pounds
(ii) Ky-31 Tall Fescue	25 pounds
(iii) Weeping Lovegrass,	10 pounds
(iv) Kobe or Korean Lespedeza ,	10 pounds
(v) Bicolor Lespedeza	5 pounds
(vi) Millett or Sudangrass 10 pounds	

2. Mixture Two: May-July

(i) Sericea Lespedeza (scarified)	35 pounds
(ii)Ky-31 Tall Fescue	25 pounds
(iii) Weeping Lovegrass	10 pounds
(iv) Bicolor Lespedeza	5 pounds
(v) Millett or Sudangrass	10 pounds

3. Mixture Three: August-October

(i) Sericea Lespedeza (Unscarified)	45 pounds
(ii) Ky-31 Tall Fescue	9-5 pounds
(iii) Weeping Lovegrass	5 pounds
(iv) Bicolor Lespedeza	5 pounds
(v) Balboa or English Rve	15 pounds

4. Mixture Four: November-January

(i) Sericea Lespedeza (unscarified)	2 0 pounds
(ii) Ky-31 Tall Fescue	40 pounds
(iii) Weeping Lovegrass *	5 pounds,
(iv) Bicolor Lespedeza	5 pounds
(v) Balboa or English Rye	15 pounds

(k) Evaluation of Vegetation Survival. Inspection and evaluation of' vegetation for cover and survival shall be made as soon as it is possible to determine if a satisfactory stand has been established. In no instance shall this vegetative cover check be made until twelve (12) months following the planting of trees or shrubs. A revegetation evaluation report shall be prepared and filed by the inspector.

(1) Standards for Perennials. Standards for legumes and perennial grasses shall require at least an eighty percent (80%) ground cover. Bare areas shall not exceed one-fourth (1/4) acre (100 feet by 100 feet) in size, nor total more than twenty percent (20%) of the area seeded unless such areas are too stony to support vegetation.

(m) Standards for Woody Plants with Perennials. Standards for woody plants with legumes and perennial grasses overseeded shall require an eighty percent (80%) establishment of ground cover of legumes and perennial grasses and six hundred (600) trees

or woody plants per acre distributed more or less uniformly over the area. No fifty-foot by fifty-foot (50' x 50') area shall contain fewer than seventeen (17) surviving trees or woody plants.

(n) Performance Bond Release. After the vegetative cover has been inspected and approved, the operator shall submit his final report to the Commissioner and request release of the remaining portion of the performance bond still in force. No revegetation performance bonds will be released until the approved revegetation plan has been carried out unless the Commissioner determines that further efforts toward revegetation are impractical. No revegetation plans will be considered to have been carried out until satisfactory coverage and survival have been obtained.

Authority: *T.C.A. Section 58-1543.* ***Administrative History****. Original Rule certified May 24, 1974. (2)(b), (2)(c), (3)(a), (3)(b), (3)(d), (4)(b), (5)(g), (5)(h), (5)(j) and (5)(m)-Amended: Filed May 17, 1974; Effective June 17, 1974. (2)(c), (5)(f), (5)(g), (5)(j)-Amended: Filed November 12, 1975; Effective December 12, 1975*.